

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Inquiry Concerning the Deployment of)	GN Docket No. 15-191
Advanced Telecommunications Capability to)	
All Americans in a Reasonable and Timely)	
Fashion, and Possible Steps to Accelerate Such)	
Deployment Pursuant to Section 706 of the)	
Telecommunications Act of 1996, as Amended)	
by the Broadband Data Improvement Act)	

COMMENTS OF ADTRAN, INC.

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SUMMARY

ADTRAN supports Congress' and the Commission's goal of ubiquitous deployment of broadband services. This *Notice of Inquiry* should provide an opportunity for the Commission to assess accurately and objectively whether advanced services are being deployed to all Americans in a reasonable and timely manner. But the Commission can only do so if it asks the right questions, collects the appropriate data, and undertakes the correct analyses.

There are a number of ways in which the *Notice of Inquiry* suggests the Commission could improve its assessment of the Congressionally-directed inquiry. The *Notice of Inquiry* appears to be asking the wrong question. Instead of asking whether we are making timely and reasonable progress towards the goal of ubiquitous broadband, it appears -- like the kids in the back seat on a car trip -- merely to be asking "are we there yet?" This problem is exacerbated by the fact that the Commission has adopted a forward-looking goal in defining "advanced services," but looks backwards at historic data to see if we have reached that goal.

ADTRAN is also concerned because the *Notice of Inquiry* appears to be creating new, extraneous hurdles to reaching a positive response to the Section 706 question. In this broadband progress report, the Commission should not increase the minimum speeds considered to be "advanced services," factor pricing or adoption into the assessment, require that there be competitive providers of advanced services everywhere, or assess the security aspects of broadband providers' services.

The *Notice of Inquiry* also falls short of being technology neutral in a couple of respects. The *Notice of Inquiry* suggests that advanced services to schools can only be provided via fiber-to-the-premises. In fact, advances in cable, fixed wireless and copper loop technologies allow these divergent facilities to meet the Commission's long-term goal of 1 Gbps per 1,000 students. The *Notice of Inquiry* also seems prematurely to conclude that fixed and mobile broadband are distinct services, but without having undertaken a thorough market analysis.

America is making significant strides towards ubiquitous broadband. In less than a generation, consumers have gone from 56 kbps dial-up modems to gigabit service to the home in hundreds of markets and spreading fast. Wireless carriers have built out fourth generation wireless services nearly everywhere, and are primed to deploy fifth generation mobile broadband services. Satellite service now provides broadband at speeds up to 40 mbps to remote and insular areas from Geostationary satellites, with multiple proposals for much greater speeds through constellations of low-Earth orbit satellites. New technologies such as G.fast and DOCSIS 3.1 are providing ever increasing speeds over embedded plant. ADTRAN believes that this significant and continuous progress means that advanced services are being deployed to all Americans in a reasonable and timely fashion.

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COMMENTS OF ADTRAN, INC.

ADTRAN, Inc. (“ADTRAN”) takes this opportunity to comment on several issues raised in the Commission’s *Notice of Inquiry* regarding the Eleventh Broadband Progress Report the Commission will undertake pursuant to Section 706 of the Telecommunications Act of 1996.¹ Congress directed the Commission to determine and report annually on “whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion,”² and the *Notice of Inquiry* seeks information that will allow the Commission to answer that question. ADTRAN offers some comments on a few of the Commission’s preliminary assessments in the *Notice of Inquiry*, as well as suggested improvements to some of the proposed analyses.

¹ *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act*, GN Docket No. 15-191, FCC 15-101, released August 7, 2015 (hereafter cited as “*Notice of Inquiry*”).

² 47 U.S.C. § 1302. Section 706 of the Telecommunications Act of 1996, Pub. L. No. 104-104, § 706, 110 Stat. 56, 153 (1996), as amended by the Broadband Data Improvement Act, Pub. L. No. 110-385, 122 Stat. 4096 (2008), as codified in Title 47, Chapter 12 of the United States Code. See 47 U.S.C. § 1301 *et seq.*

ADTRAN, founded in 1986 and headquartered in Huntsville, Alabama, is a leading global manufacturer of networking and communications equipment, with an innovative portfolio of solutions for use in today's telecommunications networks. ADTRAN's equipment is deployed by some of the world's largest service providers, as well as distributed enterprises and small and medium businesses. ADTRAN thus brings an expansive perspective to this proceeding, as well as an understanding of the importance to individuals, communities and our country of robust and ubiquitous broadband. ADTRAN has been a strong advocate in Commission proceedings to help spur broadband deployment,³ and has itself launched a gigabit initiative that has surpassed its goal of facilitating the deployment of 200 gigabit communities by the end of 2015.⁴

ADTRAN certainly shares the Commission's and Congress' goal of universal availability of advanced services. And ADTRAN believes we are well on our way towards achieving that ultimate goal. In less than a generation, consumers have gone from the best-available wireline technology of 56 kbps dial-up modems to gigabit service to the home in hundreds of markets and spreading fast. Wireless carriers have built out fourth generation wireless services nearly everywhere, and are primed to deploy fifth generation mobile broadband services. Satellite service now provides service at speeds up to 40 mbps to remote and insular areas from

³ E.g., Comments of ADTRAN in WC Docket No. 10-90 *et. al.*, filed August 8, 2014; Comments of ADTRAN in WC Docket No. 10-90, filed March 28, 2013; Comments of ADTRAN in WC Docket No. 10-90 *et. al.*, filed January 18, 2012; Comments of ADTRAN in WC Docket No. 10-90 *et. al.*, filed April 18, 2011.

⁴ See, <http://gigcommunities.net/adtran-reaches-200-gigabit-community-milestone/> ("More than 200 communities are now able to access [next-generation gigabit broadband services](#) as a result of ADTRAN's Enabling Communities, Connecting Lives program, ADTRAN announced August 11."); *Light Reading*, August 13, 2014, "Adtran Launches 'Gig Communities' Initiative," available at <http://www.lightreading.com/broadband/fttx/adtran-launches-gig-communities-initiative/d/d-id/710330>. See also, <http://gigcommunities.net/>.

Geostationary satellites,⁵ with multiple proposals for much greater speeds through constellations of low-Earth orbit satellites. Yet despite all of this positive news, ADTRAN is concerned that the *Notice of Inquiry* seems poised once again to reach a negative finding to the Section 706 question of “whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion.” ADTRAN submits these comments in hopes that the Commission will ask the right questions and undertake the proper analyses so that the resulting Eleventh Broadband Progress Report is not perceived merely as “kabuki theater.”⁶

**The Commission Must be Prepared to Answer the
Question that Congress Asked in Section 706**

Congress directed the Commission in Section 706(b) to undertake an annual assessment of “whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion.”⁷ In the last Broadband Progress Report, the Commission seems to have answered a different question – not whether reasonable and timely progress is being made, but rather, as the kids in the back of the car repetitively ask on a road trip, “are we there yet?” The *Notice of Inquiry* suggests that the Commission will once again answer the wrong question.

Much of the *Notice of Inquiry* tees up questions regarding the “destination” – including what constitutes “advanced services,” the benchmarks for consumer broadband, sources of data, pricing and adoption information, schools and libraries-specific standards, and whether mobile and fixed wireless must both be available. But nowhere does the Commission ask similarly

⁵ See, e.g., <http://www.engadget.com/2012/02/14/viasat-surfbeam-2-pro-40mbps-satellite-broadband/>.

⁶ See, *Notice of Inquiry*, Statement of Commissioner Ajit Pai Approving in Part and Dissenting in Part, at p. 1.

⁷ Telecommunications Act of 1996, Section 706(b), codified at 47 U.S.C. § 1302(b).

detailed questions regarding how “reasonable and timely” progress towards the goal of universal availability of advanced services should be defined or measured.

Would progress towards universal availability of advanced services that is faster than any other rollout of new technology be considered “reasonable and timely”? If the only underserved areas where slow deployment progress was occurring were very low-density and very high-cost – which would not be served without massive subsidies – would that be “reasonable”? If areas where relatively slow deployment was occurring were low-income areas where rational businesses would not normally deploy because of very low adoption rates without subsidization of consumer broadband services – and taking into account the fact that the Commission has not yet adopted, much less implemented, reforms to its Lifeline Program to subsidize broadband – would that be “reasonable”? To what extent should the Commission consider economic and demographic factors to be part of assessing “reasonable and timely” progress? These are complicated issues, and the answers are not necessarily a simple “yes” or “no.” But these and other similar questions are not raised in the *Notice of Inquiry*, making it impossible for the Commission to address the specific question Congress asked the Commission to address in Section 706(b).

The problem of asking the wrong question is further exacerbated because even in trying to analyze the “are we there yet” question, the Commission seems to be using a forward-looking definition of the destination – “advanced services” – while using historic, backwards-looking data to decide if that goal has been reached.⁸ That mis-match means that there will inevitably be a lag between our arrival at the destination and the Commission declaring it so.

⁸ Compare Separate Statement of Commissioner Clyburn (FCC definition of advanced services must be “forward-looking”), with Separate Statement of Chairman Wheeler (the 25/3 standard for advanced services “recognizes how consumers actually use broadband at home today, and is ‘table stakes’ in 21st century communications.”).

In the previous February 2015 *Broadband Progress Report* when the Commission decided that “advanced services” should be defined as 25/3 Mbps, it justified that speed based in part on the capability of streaming 4k television service.⁹ However, at present only a small percentage of TV sets are 4k compatible, and little 4k programming is being offered. Indeed, the previous *Broadband Progress Report* indicated that “[w]hile 4K is still in the early stages, Cisco projects that this service may ‘account for 22% of global VOD Traffic in 2018.’”¹⁰ The Commission in making its negative finding defined “advanced services” based on this future demand, but did not attempt to assess whether broadband networks would be able to meet that demand when it was forecast to arrive, but rather whether that demand could have been met by the networks deployed at the end of 2013. The *Notice of Inquiry* proposes to retain the 25/3 mbps threshold (at least for fixed terrestrial services), and likewise does not ask whether broadband service providers are on track to deploy services to fulfill that demand when it is expected to arrive. Instead, the *Notice of Inquiry* addresses different sources of historic data on the broadband services that have already been deployed.¹¹

ADTRAN believes that continuing advances in broadband technology make it highly likely that sufficient capabilities to support 4K TV and other applications requiring speeds of 25/3 (or greater) will be widely available when widespread demand for such services arises.

⁹ February 2015 *Broadband Progress Report* at ¶ 32. In adopting the 25/3 standard, the Commission seemingly gave no weight to evidence that lower data rates were appropriate. *See, e.g.*, Comments of TechFreedom in Docket Nos. 14-126 and 14-28, filed January 22, 2015, <http://apps.fcc.gov/ecfs/document/view?id=60001015785>.

¹⁰ *Ibid*, citing 2014 Cisco Zettabyte Report at pp. 8, 22. Cisco’s updated 2015 forecast is that “Ultra-HD (or 4K) IP VoD will account for 21 percent of global VoD traffic in 2019.” 2015 Cisco Zettabyte Report at p. 8, so there seems to have been a slowing down of 4K TV streaming rollout or uptake. http://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/VNI_Hyperconnectivity_WP.html

¹¹ *Notice of Inquiry* at ¶¶ 53-72.

Deployment of fiber to the premises continues to expand.¹² Cable companies are deploying DOCSIS 3.1 technology, which supports 1 Gbps or greater service to homes over the current coaxial infrastructure.¹³ In addition, technology continues to evolve for twisted copper loops, with G.fast field trials demonstrating speeds of 330 Mbps.¹⁴ And for mobile broadband systems, 4G technologies are now capable of speeds of 100 Mbps,¹⁵ and 5G technologies are on the horizon that will be even faster, with download rates approaching 1 Gbps.¹⁶ Given the historic levels of investment by broadband service providers and the previous rollouts of advanced broadband technologies, ADTRAN is confident that the demand for new services and applications like 4K TV can be met when that demand develops in the not-too-distant future.¹⁷

The Commission Should Not “Move the Goalposts” Again in this Proceeding

ADTRAN is also concerned that the *Notice of Inquiry* creates the appearance of erecting

¹² E.g., <http://arstechnica.com/business/2015/07/att-gets-directv-merger-approval-must-deploy-fiber-to-12-5m-customers/> (AT&T will deploy fiber to 12.5 million customers).

¹³ E.g., <http://arstechnica.com/business/2015/08/comcast-planning-gigabit-cable-for-entire-us-territory-in-2-3-years/>; <http://www.cio.com/article/2966093/new-chipsets-lay-groundwork-for-gigabit-speeds-to-more-homes.html>.

¹⁴ E.g., <http://advanced-television.com/2015/08/25/bt-connects-first-g-fast-trial-customers/>; <http://www.cio.com/article/2966093/new-chipsets-lay-groundwork-for-gigabit-speeds-to-more-homes.html>.

¹⁵ E.g., <http://www.wirelessinternet.org/4G-network.php>.

¹⁶ E.g., <http://www.theguardian.com/technology/2014/jan/23/south-korea-internet-download-speeds-5g>.

¹⁷ A separate issue exists as to whether the Commission’s new Open Internet rules and newly-applicable Title II statutes and regulations will retard investment by broadband service providers. *See, e.g.*, Comments of ADTRAN in GN Docket No. 14-28, filed July 15, 2014 at pp. 13-15 (discussing the deterrent effect on broadband investment of the Commission’s previous (and relatively less onerous) net neutrality rules). But if the Commission’s Open Internet rules and Title II regulations were what was limiting the availability of advanced services to all Americans in a reasonable and timely basis, then Section 706(b) directs the Commission remove that barrier to infrastructure investment.

additional artificial hurdles to the Commission’s ability to make a positive response to the Congressionally-mandated question of “whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion.” The *Notice of Inquiry* proposes to retain the 25/3 Mbps benchmark, but then goes on to ask whether this benchmark should be raised to account for the possibility that subscribers are increasingly using broadband applications and services that require greater upload capability than traditional web browsing or video streaming services.¹⁸ In addition, the *Notice of Inquiry* asks whether the Commission should “adopt a forward-looking benchmark of 100 Mbps/10 Mbps in addition to a 25 Mbps/3 Mbps speed benchmark.”¹⁹ As discussed in the preceding section, the 25/3 Mbps benchmark is already forward-looking, because it is based on usage of services such as 4K TV that is *de minimis* presently, and not expected to comprise as much as 21% of Video-on-demand traffic until 2019.²⁰ And with regard to the use of applications with greater upload demands, absent some dramatic changes (such as widespread adoption of P2P video distribution or HD video calling), an updated version of the Cisco study relied on by the Commission in adopting the 25/3 Mbps benchmark does not expect any change in the asymmetric nature of Internet traffic.²¹ Thus, it is not clear that there would be any reason to adopt an even more forward-looking benchmark of 100/10 Mbps, particularly when the Commission proposes to continue to use backwards-looking historic data on broadband deployment.

The *Notice of Inquiry* also suggests that the Commission may consider a number of factors in addition to broadband service deployment to address Section 706(b)’s directive that the

¹⁸ *Notice of Inquiry* at ¶ 24.

¹⁹ *Notice of Inquiry* at ¶ 25.

²⁰ *See*, n. 10, *supra*.

²¹ *2015 Cisco Zettabyte Report* at p. 16.

Commission annually assess “whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion.” The *Notice of Inquiry* indicates that the Commission plans “to consider pricing, data allowances and adoption as additional factors relevant to our determination of whether advanced telecommunications capability is actually available to consumers under section 706.”²² Factors such as pricing and adoption are important issues. Indeed, Congress expressly directed the Commission to collect and publish information on pricing and adoption, *inter alia*, in Section 103 of the Broadband Data Improvement Act, codified at 47 U.S.C. 1303(c),²³ so it knows how to tell the Commission to collect this information if it thought it germane. It would have been unnecessary for Congress to have specifically called for the Commission to collect this information in the Broadband Data

²² *Notice of Inquiry* at ¶ 50.

²³ Broadband Data Improvement Act ([Pub. L. 110–385](#), title I, § 103, Oct. 10, 2008, [122 Stat. 4096](#)). 47 U.S.C. §1303(c) provides:

(c) Consumer survey of broadband service capability

(1) In general

For the purpose of evaluating, on a statistically significant basis, the national characteristics of the use of broadband service capability, the Commission shall conduct and make public periodic surveys of consumers in urban, suburban, and rural areas in the large business, small business, and residential consumer markets to determine—

- (A) the types of technology used to provide the broadband service capability to which consumers subscribe;
- (B) the amounts consumers pay per month for such capability;
- (C) the actual data transmission speeds of such capability;
- (D) the types of applications and services consumers most frequently use in conjunction with such capability;
- (E) for consumers who have declined to subscribe to broadband service capability, the reasons given by such consumers for declining such capability;
- (F) other sources of broadband service capability which consumers regularly use or on which they rely; and
- (G) any other information the Commission deems appropriate for such purpose.

(2) Public availability

The Commission shall make publicly available the results of surveys conducted under this subsection at least once per year.

Improvement Act if it were already subsumed under the question it directed the Commission to answer in Section 706 when it asked about advanced services *deployment* progress.

The *Notice of Inquiry* also suggests that the Commission may consider "factors beyond physical deployment in determining whether broadband is being deployed to all Americans in a reasonable and timely fashion."²⁴ The *Notice of Inquiry* asks generally what additional factors it should consider, and specifically seeks comment on whether the Commission should consider whether consumers have access to multiple providers.²⁵ It strikes ADTRAN as odd that the Commission would try to rely on a consumer's lack of competition amongst multiple advanced services providers to make a negative finding as to whether advanced services were being reasonably and timely deployed, particularly because the Commission recently eliminated universal service subsidization of multiple providers in the same territory.²⁶

²⁴ *Notice of Inquiry* at ¶ 51.

²⁵ *Ibid.*

²⁶ See, e.g., *Connect America Fund; A National Broadband Plan for Our Future; Establishing Just and Reasonable Rates for Local Exchange Carriers; High-Cost Universal Service Support; Developing a Unified Intercarrier Compensation Regime; Federal-State Joint Board on Universal Service; Lifeline and Link-Up; Universal Service Reform—Mobility Fund*; WC Docket Nos. 10-90, 07-135, 05-337, 03-109, CC Docket Nos. 01-92, 96-45, GN Docket No. 09-51, WT Docket No. 10-208, Report and Order and Further Notice of Proposed Rulemaking, 26 FCC 17663 (2011):

¶ 281: Providing universal service support in areas of the country where another voice and broadband provider is offering high-quality service without government assistance is an inefficient use of limited universal service funds. We agree with commenters that "USF support should be directed to areas where providers would not deploy and maintain network facilities absent a USF subsidy, and not in areas where unsubsidized facilities-based providers already are competing for customers." [citing Sprint Nextel *USF/ICC Transformation NPRM* Comments at 34-35].

¶ 316: We agree with numerous commenters that our priority in awarding USF support should be to expand service, and that permitting multiple winners as a routine matter in any geographic area to serve the same pool of customers would drain Mobility Fund resources with limited corresponding benefits to consumers. (footnotes omitted)

The *Notice of Inquiry* also specifically asks how security concerns should be factored into the assessment of whether advanced services are being deployed on a reasonable and timely basis.²⁷ As the *Notice of Inquiry* acknowledges,²⁸ security may be relevant to the issue of non-adoption, but does not help in answering the question that Congress asked, which is whether advanced services are being timely deployed. Moreover, ADTRAN finds it somewhat ironic that the *Notice of Inquiry* specifically focuses on security as a critical element of advanced services, because in the *Open Internet Order* the Commission dismissed claims that security functions provided by the Internet access service providers were critical or inextricably intertwined with the telecommunications component of the Internet access service providers' offerings.²⁹

The *Notice of Inquiry* Suggests the Commission's Analyses may not be Technology Neutral

In a couple of instances, the *Notice of Inquiry* appears to suggest that the Commission's analyses of whether advanced services are being deployed to all Americans in a reasonable and timely manner may not be technology neutral. The *Notice of Inquiry* states:

In addition, the Commission found that “approximately 35 percent of schools are without access to fiber” and concluded that this “further independently justifies a finding that

²⁷ *Notice of Inquiry* at ¶ 52.

²⁸ *Ibid.*

²⁹ *E.g., Protecting and Promoting the Open Internet*, 30 FCC Rcd. 5601 (2015) at ¶ 373:

Other security functions—firewalls and parental controls, for example—either fall within the telecommunications systems management exception because they are used exclusively for management of the telecommunication service or are separable information services that are offered by providers other than providers of broadband Internet access service. Such security features simply filter out unwanted traffic, and do not alter the fundamental character of the underlying telecommunications service offered to users.

advanced telecommunications capability is not being deployed to elementary and secondary schools in a reasonable and timely fashion.”³⁰

Such a simplistic analysis assumes that the capacity necessary to provide schools with advanced services can only be provided by fiber-to-the-premises. That assumption is wrong. Fiber deployed all the way to the school is not the only technology capable of achieving the Commission's long-term goal for broadband connections to schools of 1 Gbps per 1000 students. For example, ADTRAN has previously explained that advances in copper technologies have greatly increased the capabilities of the embedded copper loops.³¹ G.fast is deployed from distribution points located deep in the outside plant, and can deliver combined upstream and downstream speeds of up to 1 Gbps over short copper loops.³² And interoperability tests of DOCSIS 3.1 products for a new generation of high-speed hardware have demonstrated that this technology can deliver up to 10 Gbps on Hybrid Fiber-Coax (HFC) networks.³³ In addition, fixed wireless broadband solutions are also available presently that provide 1 Gbps and higher services.³⁴ Thus, the absence of direct fiber connections to schools does not equate to the

³⁰ Notice of Inquiry at ¶ 87, citing the *2015 Broadband Progress Report and Notice of Inquiry on Immediate Action to Accelerate Deployment*, 30 FCC Rcd 1375 (2015) at ¶ 138.

³¹ E.g., Comments of ADTRAN in PS Docket No. 14-174 *et. al*, filed February 5, 2015.

³² ITU-T Recommendation G.9701, “Fast Access to Subscriber Terminals (FAST) – Physical layer specification,” December 2014.

³³ E.g., <http://www.businesswire.com/news/home/20141216005295/en/Multi-Gigabit-Cable-Broadband-Speeds-Closer-Consumers#.VPSbTk2Ya70>. See also, Gigaom, “Comcast shows off 1 Gbps broadband,” <https://gigaom.com/2011/06/16/comcast-shows-off-1-gbps-broadband/>; ars technica, “Comcast Planning Gigabit Cable for Entire US Territory in 2-3 Years,” <http://arstechnica.com/business/2015/08/comcast-planning-gigabit-cable-for-entire-us-territory-in-2-3-years/>

³⁴ E.g., http://www.bridgewave.com/company/pressreleases_20141011.cfm (“Bridgewave Unveils Multi- Gigabit Millimeter Wave Wireless Backhaul and Front Haul Solutions”); <http://www.dragonwaveinc.com/products/packet-microwave/horizon-quantum> (“Delivering from 2 to 4 Gbps per link, Horizon Quantum represents the next generation in packet microwave

absence of advanced services being deployed to those schools in a reasonable and timely basis.

ADTRAN is also concerned because the *Notice of Inquiry*'s discussion of mobile broadband services intimates that the Commission will not undertake the proper analyses of the role of that broadband technology in this proceeding. The *Notice of Inquiry* suggests that fixed and mobile broadband are distinct services, but the *Notice of Inquiry* neither references nor applies any thorough market analyses to justify such a conclusion. The Commission states:

In this regard, we note in this Inquiry a number of factors indicating that mobile and fixed broadband appear to be different services in a number of respects under current technological and economic conditions, and that each currently appears best suited to serve different consumer needs.³⁵

The *Notice of Inquiry*'s determination of the broadband services to be included in the market is seemingly based on its own perceptions, however, not derived from a thorough market assessment:

However, fixed broadband lacks mobility. Mobile broadband has become increasingly important for accessing websites, navigating during travel, connecting on social media, communicating with family and friends, receiving timely news updates, and obtaining entertainment while away from a fixed broadband connection. For example, an entire ecosystem of location-aware applications depends primarily, if not solely, on mobile broadband access. Thus, fixed and mobile broadband appear to meet different consumer needs.³⁶

The Commission does not indicate that it plans to conduct a detailed market analysis, despite the fact that it has elsewhere acknowledged the benefits of such analyses. In the recent *Technologies* technology and sets a new benchmark for performance.”).

³⁵ *Notice of Inquiry* at ¶ 3. The *Notice of Inquiry* makes similar conclusions about satellite-provided broadband: “Fixed broadband service includes both fixed terrestrial broadband (primarily wireline, but including some fixed wireless service) and satellite service. Due to the very different service characteristics, we often discuss fixed terrestrial and satellite services separately.” *Notice of Inquiry* at fn. 10.

³⁶ *Notice of Inquiry* at ¶ 8. See also, *Ibid.* (“The ability to access advanced telecommunications capabilities while on the move cannot be provided by fixed broadband service.”).

Transition Order, the Commission stated:

NASUCA proposes that, when determining the adequacy of substitutes, it would be appropriate to use the “traditional antitrust formula for determining substitutability, used in the *Qwest Phoenix Forbearance Order*.” In the *Qwest Phoenix Forbearance Order*, the Commission evaluated Qwest’s petition for forbearance using a market power analysis that is similar to that used by the Commission in many prior proceedings and by the Federal Trade Commission and the Department of Justice in antitrust reviews. Under this approach, the Commission “separately evaluate[d] competition for distinct services, for example differentiating among the various retail services purchased by residential and small, medium, and large business customers, and the various wholesale services purchased by other carriers.” The Commission also considered “how competition varie[d] within localized areas in the [relevant market].” To what extent would this market power analysis help inform an evaluation of whether adequate substitutes exist? What specific parts of the market power analysis would be beneficial when determining whether adequate substitutes exist?³⁷

The *Notice of Inquiry* does not suggest that it intends to undertake such an analysis, or seek the data to make such a determination.³⁸

³⁷ *Technology Transitions; Policies and Rules Governing Retirement Of Copper Loops by Incumbent Local Exchange Carriers*, FCC 15-97, released August 7, 2015 at ¶ 236 (footnotes omitted).

³⁸ Cf., Department of Justice Horizontal Mergers Guidelines at pp. 8-9, available at <http://www.justice.gov/atr/horizontal-merger-guidelines-08192010>:

The Agencies employ the hypothetical monopolist test to evaluate whether groups of products in candidate markets are sufficiently broad to constitute relevant antitrust markets. The Agencies use the hypothetical monopolist test to identify a set of products that are reasonably interchangeable with a product sold by one of the merging firms.

The hypothetical monopolist test requires that a product market contain enough substitute products so that it could be subject to post-merger exercise of market power significantly exceeding that existing absent the merger. Specifically, the test requires that a hypothetical profit-maximizing firm, not subject to price regulation, that was the only present and future seller of those products (“hypothetical monopolist”) likely would impose at least a small but significant and non-transitory increase in price (“SSNIP”) on at least one product in the market, including at least one product sold by one of the merging firms. For the purpose of analyzing this issue, the terms of sale of products outside the candidate market are held constant. The SSNIP is employed solely as a methodological tool for performing the hypothetical monopolist test; it is not a tolerance level for price increases resulting from a merger.

ADTRAN does not know what the outcome would be if the Commission undertook a thorough market analysis. But even the limited discussion and information in the *Notice of Inquiry* suggests that fixed and mobile broadband services are not necessarily distinct. As discussed above, the Commission views mobility as a critical distinction, but many fixed broadband services providers offer a degree of mobility through WiFi access that is part of the fixed broadband offering.³⁹ Likewise, the *Notice of Inquiry* acknowledges that mobile broadband can serve as a fixed base from which to tether multiple devices:

We also seek comment on the incidence and trends in use of mobile broadband networks to support simultaneous Internet access for multiple devices. [fn. 65 - For example, simultaneous usage of multiple devices over a single mobile broadband connection using the tethering feature on a smartphone, or a mobile hotspot device.]⁴⁰

The closest the *Notice of Inquiry* comes to suggesting it may undertake a market analysis is its statement at ¶ 8 that “We propose to evaluate this issue based on information concerning customer purchasing and usage patterns, and service capabilities, ***among other factors***.” (emphasis added).

³⁹ E.g., <http://wifi.xfinity.com/default.php>. In contrast to its observation at paragraph 3 that mobile and fixed broadband are different services, the *Notice of Inquiry* elsewhere (at ¶¶ 17-18) provides some recognition of the role WiFi may play in blurring any distinction between fixed and mobile broadband:

We also note that many mobile broadband consumers are using devices that not only provide mobile service but also are able to obtain access to fixed broadband networks via Wi-Fi technology while at home or away from home. Some consumer products will prioritize use of the Wi-Fi network and then use the mobile network only if Wi-Fi is unavailable. While connecting through Wi-Fi does not itself provide true mobility, it can provide access to broadband service outside the home by use of a fixed broadband network. Indeed, a consumer without a mobile service can access broadband through a fixed network using Wi-Fi and any Wi-Fi-enabled device

We also seek comment on how the availability of Wi-Fi should factor into our consideration of the availability of advanced telecommunication capability, ***if at all***. (emphasis added, footnote omitted).

⁴⁰ *Notice of Inquiry* at ¶ 29. See also, *SMART CITY HOLDINGS, LLC, and its Wholly-Owned Subsidiaries*, DA 15-917, August 18, 2015 (“The Internet is a vital platform for economic growth, innovation, competition, and free expression. Wi-Fi is an essential access ramp to that platform. ... Consumers also can establish their own Wi-Fi networks by using FCC

Such usage suggests that fixed and mobile broadband serve to some degree as substitutes for each other, rather than as distinct services.

The *Notice of Inquiry* included some market statistics, albeit based on survey data and not comprehensive.⁴¹ That limited market data indicates that as much as one-third of individuals connect to the Internet at home through a wireless service (including satellite, fixed wireless and mobile broadband service), suggesting that fixed and mobile services do serve as substitutes. Given this information, it would seem hard to justify creating an additional hurdle of requiring access to both fixed and mobile broadband in order for the Commission to be able to affirmatively answer the Section 706 question of “whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion.”⁴²

CONCLUSION

ADTRAN has worked tirelessly to support the deployment of advanced services to all Americans, and has seen great strides being made towards achieving that goal. Congress has tasked the Commission with annually assessing whether we are on track to reach ubiquitous deployment of advanced services so that all consumers, businesses, schools and libraries can take full advantage of the myriad benefits of broadband. ADTRAN urges the Commission to undertake the requisite analyses in a thorough and objective manner, consistent with the recommendations herein. Such a process will ensure that the Commission produces an accurate

authorized mobile hotspots and their wireless data plans to connect Wi-Fi enabled devices to the Internet.”).

⁴¹ *Notice of Inquiry* at ¶ 12.

⁴² *Cf.*, *Notice of Inquiry* at ¶ 6 (“Building on the discussions in the *2015 Broadband Progress Report*, we seek comment on whether consumers must have access to both fixed and mobile broadband service in order for advanced telecommunications capability to be deemed available.”).

and credible response to the question posed by Section 706 -- "whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion."

Respectfully submitted,
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